

Contents

Letters to the Editor

Giant luminous arcs: a possible test for the evolution of clusters of galaxies

Wu, X.-P.

L1

The vis/UV spectrum of coals and the interstellar extinction curve

Papoular, R., Breton, J., Gensterblum, G., Nenner, I., Papoular, R.J., Pireaux, J.-J.

L5

Discovery of a variable super soft X-ray source in the Large Magellanic Cloud during the ROSAT All-Sky Survey

Schaeidt, S., Hasinger, G., Trümper, J.

L9

High resolution $^{12}\text{CO}(2-1)$ observations of the molecular gas in Centaurus A

Rydbeck, G., Wiklund, T., Cameron, M., Wild, W., Eckart, A., Genzel, R., Rothermel, H.

L13

Cosmology

The nonlinear stage of evolution of spherically symmetric disturbances in an Einstein-de Sitter universe: explosive and implosive modes

Kovalenko, I.G., Sokolov, P.A.

1

Extragalactic astronomy

Observations and starburst models of NGC 520

Bernlöhr, K.

20

The distribution of CO in NGC 4945

Dahlem, M., Golla, G., Whiteoak, J.B., Wielebinski, R., Hüttemeister, S., Henkel, C.

29

Emission from a damped Ly α absorber at $z=2.81$

Möller, P., Warren, S.J.

43

Dynamo-driven accretion in galaxies

Rüdiger, G., Elstner, D., Schultz, M.

53

Optical spectroscopy of the emission-line gas in the center of A 1795

Anton, K.

60

Self-collimated jets beyond the light cylinder

Appl, S., Camenzind, M.

71

Globular clusters in the Local Group of galaxies: a statistical approach

Covino, S., Pasinetti Fracassini, L.E.

83

On the predictive power of the minimum energy condition. I. Isotropic steady-state configurations

Pohl, M.

91

Galactic structure and dynamics

A rotating black hole in the galactic center

Falcke, H., Biermann, P.L., Duschl, W.J., Mezger, P.G.

102

Stellar clusters and associations

The chemical compositions of the distant galactic open clusters Bochum 1 and NGC 1893

Rolleston, W.R.J., Brown, P.J.F., Dufton, P.L., Fitzsimmons, A.

107

NGC 6603: a young rich open cluster towards the bulge

Bica, R., Ortolani, S., Barbuy, B.

117

Formation, structure and evolution of stars

Recent phase changes in X Persei: optical, infrared and X-ray behaviour

Roche, P., Coe, M.J., Fabregat, J., McHardy, I.M., Norton, A.J., Percy, J.R., Reglero, V., Reynolds, A., Unger, S.J.

122

The 17.1-h optical and X-ray orbital period of AC 211/ X 2127 + 119 in M 15

Ilovaisky, S.A., Aurière, M., Koch-Miramond, L., Chevalier, C., Cordoni, J.-P., Crowe, R.A.

139

Grain depth distribution and the reality of optical transient candidates near the GRB 790325b position

Hudec, R.

151

The nature of the X-ray spectrum of VW Hydri

van Teeseling, A., Verbunt, F., Heise, J.

159

(RN) The ellipsoidal shape of the M giant in T Coronae Borealis

Yudin, B., Munari, U.

165

Spectral analysis of DY Centauri, a hot R Coronae Borealis star with an unusually high hydrogen content

Jeffery, C.S., Heber, U.

167

A series of VLBI images of SS 433 during the outbursts in May/June 1987

Vermeulen, R.C., Schilizzi, R.T., Spencer, R.E., Romney, J.D., Fejes, I.

177

Daily spectra of radio flares from SS 433 in May/June 1987

- Vermeulen, R.C., McAdam, W.B., Trushkin, S.A.,
Facondi, S.R., Fiedler, R.L., Hjellming, R.M.,
Johnston, K.J., Corbin, J. 189

(RN) Multicolour photometry of SS 433 during the monitoring campaign in May/June 1987

- Aslanov, A.A., Cherepashchuk, A.M., Goranskij, V.P.,
Rakhimov, V.Y., Vermeulen, R.C. 200

Monitoring of very rapid changes in the optical spectrum of SS433 in May/June 1987

- Vermeulen, R.C., Murdin, P.G.,
van den Hewel, E.P.J., Fabrika, S.N., Wagner, R.M.,
Margon, B., Hutchings, J.B., Schilizzi, R.T.,
van Kerkwijk, M.H., van den Hoek, L.B., Ott, E.,
Angbault, L.P., Miley, G.K., D'Odorico, S.,
Borisov, N. 204

Light curves of Type Ia supernova models with different explosion mechanisms

- Khokhlov, A., Müller, E., Höflich, P. 223

Hydrodynamic study of supernova 1987A: near the peak luminosity

- Utrobin, V. 249

On the period history of the β Cephei star BW Vulpeculae

- Sterken, C. 259

Magnetic flares near accreting black holes

- Volwerk, M., van Oss, R.F., Kuijpers, J. 265

Accretion disk flares in energetic radiation fields. A model for hard X-rays from black hole candidates

- van Oss, R.F., van den Oord, G.H.J., Kuperus, M. 275

The contribution of Type Ia supernovae to the galactic iron abundances

- Bravo, E., Isern, J., Canal, R. 288

NJL 5: the eclipsing blue straggler in ω Centauri

- Helt, B.E., Jørgensen, H.E., King, S., Larsen, A. 297

Stellar atmospheres

On the propagation of ideal, linear Alfvén waves in radially stratified stellar atmospheres and winds

- Velli, M. 304

Empirical effective temperatures and angular diameters of stars cooler than the Sun

- Di Benedetto, G.P. 315

Linear polarimetry of Ap stars. II. New observations with a reappraisal of former ones

- Leroy, J.L., Landolfi, M., Landi Degl'Innocenti, E. 335

Effect of chemical abundance on a Wolf-Rayet stellar wind driven by radiation pressure and Alfvén waves

- dos Santos, L.C., Jatenco-Pereira, V., Opher, R. 345

Long-term changes in emission line and continuum spectrum of the Be star γ Cassiopeiae: H β V/R and IR continuum flux variations

- Telting, J.H., Waters, L.B.F.M., Persi, P.,
Dunlop, S.R. 355

Diffuse matter in space (including HII regions and planetary nebulae)

Spectrophotometry of the continuum in the Crab Nebula

- Véron-Cetty, M.P., Woltjer, L. 370

The kinematic structure of the unusual outflow source Sh 2-71

- Cuesta, L., Phillips, J.P. 379

Detection of optical emission in the area of G 127.1+0.5

- Xilouris, K.M., Papamastorakis, J., Paleologou, E.V.,
Andredakis, Y., Haerendel, G. 393

On the minimum length for magnetic waves in molecular clouds

- Elmegreen, B.G., Fiebig, D. 397

Observations of TeV gamma rays from the Crab nebula

- Goret, P., Palfrey, T., Tabary, A., Vacanti, G., Bazer-
Bachi, R. 401

The formation of interstellar molecular lines in a turbulent velocity field with finite correlation length. II. The case $\sigma \gg v_{\text{therm}}$

- Kegel, W.H., Piehler, G., Albrecht, M.A. 407

Investigation of astrophysical filaments and determination of their size

- Rosso, F., Pelletier, G. 416

Anomalous dust in the environment of Herbig Ae/Be stars

- Gorti, U., Bhatt, H.C. 426

High density structure of the L 1455 dark cloud

- Juan, J., Bachiller, R., Kömpe, C., Martín-Pintado, J. 432

Visual polarization measurements in the Cepheus flare

- Bel, N., Lafon, J.-P.J., Leroy, J.-L. 444

Fractal 3-D simulations of molecular clouds

- Hetem Jr., A., Lépine, J.R.D. 451

Dust shell modelling of the carbon star IRAS 15194-5115

- Lopez, B., Perrier, C., Mékarnia, D., Lefèvre, J.,
Gay, J. 462

A multi-transition study of carbon monoxide in the Orion A molecular cloud. II. C¹⁸O

- Dutrey, A., Duvert, G., Castets, A., Langer, W.D.,
Bally, J., Wilson, R.W. 468

Alignment of dust grains in ionized regions

- Anderson, N., Watson, W.D. 477

The Sun

Reconstruction of coronal magnetic configurations: the case of strongly nonlinear force-free fields

- Cuperman, S., Bruma, C., Zoler, D., Semel, M. 480

The continuum intensity-magnetic field relation in sunspot umbrae

- Martínez Pillet, V., Vázquez, M. 494

Spectral observations of active region sources with RA-TAN-600 and WSRT

Alissandrakis, C.E., Gelfreikh, G.B., Borovik, V.N., Korzhavin, A.N., Bogod, V.M., Nindos, A., Kundu, M.R. 509

Dynamics of the solar granulation: coherence of line parameters and their variation with the height

Hanslmeier, A., Nesis, A., Mattig, W. 516

Celestial mechanics and astrometry

Orbital, precessional, and insolation quantities for the Earth from -20 Myr to +10 Myr

Laskar, J., Joutel, F., Boudin, F. 522

Physical and chemical processes

Self-generated magnetic field by transverse plasmons in celestial bodies

Xiao-qing Li, Yue-hua Ma 534

Instruments, data processing, and computational methods

Superresolution in pattern recognition and image restoration problems

Terebizh, V.Y. 543

Recursive solution to Wiener's multi-channel time filtering

Rabl, G.K.F. 552

(RN) Remarks on the information content of stellar images obtained with CCD detectors

Müller, R., Geyer, E.H. 557

Computational issues connected with 3D N-body simulations

Pfenniger, D., Friedli, D. 561

Papers accepted for publication in A. & A.

573